



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460**

**OFFICE OF PESTICIDES AND TOXIC SUBSTANCES**

**MEMORANDUM**

**DATE:** August 10, 2009

**SUBJECT:** Science review in support of the registration of Fleischmann's Vinegar Weed Control, containing 20.0% Acetic Acid As Its Active Ingredient.

<b>Decision Number:</b>	409440
<b>DP Number:</b>	366234
<b>EPA File Symbol Number:</b>	85208-R
<b>Chemical Class:</b>	Biochemical
<b>PC Code:</b>	044001
<b>CAS Number:</b>	64-19-7
<b>Active Ingredient Tolerance Exemptions:</b>	N/A; Non Food Use
<b>MRID Numbers:</b>	477447-01 to -04

**FROM:** Jacob Moore, Chemist /s/ 08/10/09 *J. Moore* 8/10/09  
Biochemical Pesticides Branch  
Biopesticides & Pollution Prevention Division (7511P)

**TO:** Leonard Cole, Regulatory Action Leader  
Biochemical Pesticides Branch  
Biopesticides & Pollution Prevention Division (7511P)

**THE FOLLOWING CONTAINS CONFIDENTIAL BUSINESS INFORMATION**

**ACTION REQUESTED**

Fleischmann's Vinegar Company, Inc. requests registration of Fleischmann's Vinegar Weed Control, which is intended for use as an herbicide on various weed grasses. In support of this registration, the registrant has submitted product chemistry data in MRIDs 477447-01 and -02 and waiver rationale in MRIDs 477447-03 and -04.

## RECOMMENDATIONS AND CONCLUSIONS

1. CSF dated 5/11/09 is **UNACCEPTABLE**, but upgradable upon specification of the name and address of the supplier of [REDACTED]
2. Product Chemistry data are **ACCEPTABLE**. No additional data are required.
3. Tier I Toxicity data are **ACCEPTABLE**. No additional data are required.
4. Tier I Non-Target data are **ACCEPTABLE**. No additional data are required.

### Note to RAL:

1. While reading the product chemistry MRID (47747701) it is confusing as to what product is being analyzed for the preliminary analysis. Is the analyzing Fleischmann's White Distilled Vinegar and proposing a 20% AI concentration or does Fleischmann's Vinegar Weed Control have an AI concentration of 20%? Or, are the two names interchangeable for the same formulation? If so, the registrant must adjust the name of the AI on the CSF to "Acetic acid" solely.

## STUDY SUMMARIES

### Product Description

Fleischmann's Vinegar Weed Control is an end-use product for non-selective control of herbaceous broadleaf weeds and weed grasses on residential, non-crop, right-of-way, and industrial land sites.

### Product Chemistry

Refer to the Data Evaluation Record (DER). Viscosity was addressed by the registrant for the TGAI (Acetic Acid). This is acceptable for satisfying the data requirement. Preliminary analysis data was submitted for three batches. This is adequate for satisfying the data requirement.

### Toxicity

Literature sources were cited by the registrant for the Tier I Toxicity Data. These sources are acceptable to satisfy the data requirements. The data is summarized in the table below. Refer to the Data Evaluation Record (DER).

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<u>Study Type/OPPTS Guideline</u>	<u>LD<sub>50</sub>/LC<sub>50</sub>/Results</u>	<u>Toxicity Category</u>	<u>MRID</u>
Acute Oral Toxicity/OPPTS 870.1100	4960 mg/kg	III	47744703
Acute Dermal Toxicity/OPPTS 870.1200	1060 mg/kg	II	47744703
Acute Inhalation Toxicity/OPPTS 870.1300	11.4 mg/L	IV	47744703
Acute Eye Irritation/OPPTS 870.2400	Low pH, not required	N/A	47744703
Acute Dermal Irritation/OPPTS 870.2500	Low pH, not required	N/A	47744703
Skin Sensitization/OPPTS 870.2600	Not a sensitizer		47744703

#### Non-Targets

Literature sources were cited by the registrant for the Nontarget Data. These sources are acceptable to satisfy the data requirements. Refer to the Data Evaluation Record (DER).

cc: J. Moore, L. Cole, BPPD Science Review File, IHAD/ARS  
J. Moore, FT, PY-S: 08/10/09



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## DATA EVALUATION RECORD

### ACETIC ACID (Fleischmann's Vinegar Weed Control)

**STUDY TYPE: Waiver Requests for Nontarget Organism and Environmental Fate Data Requirements**

**MRID 47744704**

Prepared for  
Biopesticides and Pollution Prevention Division  
Office of Pesticide Programs  
U.S. Environmental Protection Agency  
One Potomac Yard  
2777 South Crystal Drive  
Arlington, VA 22202

Prepared by  
Toxicology and Hazard Assessment Group  
Environmental Sciences Division  
Oak Ridge National Laboratory  
Oak Ridge, TN 37830  
Task Order No. 09-025

Primary Reviewer:  
Eric B. Lewis, M.S.

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Secondary Reviewers:  
Sylvia Milanez, Ph.D., D.A.B.T.

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Robert H. Ross, M.S., Group Leader

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

Quality Assurance:  
Lee Ann Wilson, M.A.

Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

#### Disclaimer

This review may have been altered subsequent to the contractor's signatures above.





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Fleischmann's Vinegar Weed Control (white distilled vinegar) is an end use product for non-selective control of herbaceous broadleaf weeds and weed grasses on residential, non-crop, right-of-way, and industrial land sites. The active ingredient is 20.00% w/w acetic acid. Impurities associated with the active ingredient are [REDACTED]. The inert ingredient is [REDACTED].

### Waiver Request

The registrant is requesting waivers for the following studies:

#### Tier I Studies

Avian Acute Oral Toxicity	(OPPTS 850.2100)
Avian Dietary Toxicity	(OPPTS 850.2200)
Freshwater Fish Acute Toxicity	(OPPTS 850.1075)
Freshwater Aquatic Invertebrate Acute Toxicity	(OPPTS 850.1010)
Seedling Emergence	(OPPTS 850.4100)
Vegetative Vigor	(OPPTS 850.4150)
Nontarget Insect Testing	(OPPTS 850.4350)

#### Tier II Studies

Sediment and Soil Absorption/Desorption	(OPPTS 835.1230)
Soil Column Leaching	(OPPTS 835.1240)
Laboratory Volatilization from Soil	(OPPTS 835.1410)
Hydrolysis	(OPPTS 835.2120)
Aerobic Soil Metabolism	(OPPTS 835.4100)
Photodegradation in Water	(OPPTS 835.2240)
Photodegradation on Soil	(OPPTS 835.2410)
Anaerobic Soil Metabolism	(OPPTS 835.4200)
Aerobic Aquatic Metabolism	(OPPTS 835.4300)
Anaerobic Aquatic Metabolism	(OPPTS 835.4400)
Dispenser – Water Leaching	(OPPTS 880.4425)
Seedling Emergence	(OPPTS 850.4225)
Vegetative Vigor	(OPPTS 850.4250)

#### Tier III Studies

Freshwater Fish/Invertebrate Testing	(OPPTS 850.1300, 850.1400, 850.1500)
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## DATA EVALUATION RECORD

### EPA Secondary Reviewer:

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<b>STUDY TYPE:</b>	Waiver Requests for Nontarget Organism and Environmental Fate Data Requirements
<b>MRID NO:</b>	47744704
<b>DECISION NO:</b>	409440
<b>DP BARCODE:</b>	DP365094
<b>TEST MATERIAL:</b>	Fleischmann's Vinegar Weed Control (a.i., 20.00 % w/w acetic acid)
<b>PROJECT STUDY NO:</b>	Not applicable
<b>SPONSOR:</b>	Fleischmann's Vinegar Co., Inc., 12604 Hiddencreek Way, Cerritos, CA 90703
<b>TESTING FACILITY:</b>	Not applicable
<b>TITLE OF REPORT:</b>	Fleischmann's Vinegar Weed Control: Nontarget Organisms and Environmental Fate
<b>AUTHOR:</b>	Norton, S.
<b>STUDY COMPLETED:</b>	May 1, 2009
<b>CONFIDENTIALITY CLAIMS:</b>	None.
<b>GOOD LABORATORY PRACTICE:</b>	A signed and dated GLP statement was included. The submitter was not the sponsor, did not conduct the studies, and does not know if the studies were conducted in accordance with 40 CFR Part 160.
<b>CONCLUSION:</b>	Sufficient information was submitted to support the requested waivers for Avian Acute Oral Toxicity, Avian Dietary Toxicity, Freshwater Fish Acute Toxicity, Freshwater Aquatic Invertebrate Acute Toxicity, Nontarget Insect Testing, Sediment and Soil Absorption/Desorption, Soil Column Leaching, Laboratory Volatilization from Soil, Hydrolysis, Aerobic Soil Metabolism, Photodegradation in Water, Photodegradation on Soil, Anaerobic Soil Metabolism, Aerobic Aquatic Metabolism, Anaerobic Aquatic Metabolism, Dispenser – Water Leaching, Freshwater Fish/Invertebrate Testing, Marine/Estuarine/Fish/Invertebrate Animal Testing, Aquatic Field/Fish/Invertebrate Testing, Avian Reproduction, Wild Mammal Acute Toxicity, Terrestrial Field Testing, Field Testing for Pollinators, and Nontarget Plant Testing for Fleischmann's Vinegar Weed Control. Studies for Seedling Emergence and Vegetative Vigor will need to be conducted. The registrant requests regulatory treatment consistent with that for registered acetic acid herbicides.

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### Product Description



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 Marine/Estuarine/Fish/Invertebrate Animal Testing

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 (OPPTS 850.10025,  
 850.1035, 850.1045,  
 850.1055, 850.1350,  
 850.1400, 850.1500)  
 (OPPTS 850.1950)  
 (OPPTS 850.2300)  
 (OPPTS 850.2400)  
 (OPPTS 850.2500)  
 (OPPTS 850.3040)  
 (OPPTS 850.4225, 850.4250,  
 850.4300, 850.4450)

Aquatic Field/Fish/Invertebrate Testing  
 Avian Reproduction  
 Wild Mammal Acute Toxicity  
 Terrestrial Field Testing  
 Field Testing for Pollinators  
 Nontarget Plant Testing

### **Registrant's Justification**

#### **Tier I**

##### **Avian Acute Oral Toxicity**

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) did not indicate avian acute oral toxicity data are needed.

The proposed product label states "Do not apply to roosting or nesting birds..."

##### **Avian Dietary Toxicity**

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) did not indicate avian dietary toxicity data are needed.

The proposed product label states "Do not apply to roosting or nesting birds..."

##### **Freshwater Fish Acute Toxicity**

The 96-hr LC<sub>50</sub> for acetic acid in bluegill sunfish (*Lepomis macrochirus*) was 75 mg/L. The 96-hr LC<sub>50</sub> in mosquito fish (*Gambusia affinis*) was 251 mg/L (HPV, 2001).

The proposed product label states "Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate."

##### **Freshwater Aquatic Invertebrate Acute Toxicity**

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The static 24-hr  $LC_{50}$  for acetic acid in *Daphnia magna* was 47 mg/L. For acetic acid solution neutralized to pH 8.0, the 24-hr  $EC_{50}$  in *D. magna* using immobility as the endpoint was 6000 mg/L. Without neutralization, the 24-hr  $EC_{50}$  using immobility as the endpoint was 95 mg/L. The 48-hr  $EC_{50}$  using immobility as the endpoint was 65 mg/L (apparently without neutralization) (HPV, 2001).

The proposed product label states "Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate."

#### Seedling Emergence/Vegetative Vigor

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) indicates this requirement is a data gap, and that data will be required via a data call-in. The registrant requests regulatory treatment consistent with that for registered acetic acid herbicides.

#### Nontarget Insect Testing

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) mentions that two unreviewed nontarget insect studies are in EPA files, but does not request review of those studies or submission of any data.

The proposed product label includes the following statement: "Do not apply ... to flowering plants during times of day when bees are actively foraging." If a waiver is not granted, the registrant requests a regulatory treatment consistent with that for registered acetic acid herbicides.

### **Tier II**

#### Sediment and Soil Absorption/Desorption

Not required, since Tier I studies do not indicate adverse effects.

#### Soil Column Leaching

Not required, since Tier I studies do not indicate adverse effects.

#### Laboratory Volatilization from Soil

Not required, since Tier I nontarget organisms data do not indicate adverse effects.



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Hydrolysis

Not required, since Tier I studies do not indicate adverse effects.

Aerobic Soil Metabolism

Not required, since Tier I studies do not indicate adverse effects.

Photodegradation in Water/Photodegradation on Soil

Not required, since Tier I studies do not indicate adverse effects.

Anaerobic Soil Metabolism

Not required, since Tier I studies do not indicate adverse effects.

Aerobic Aquatic Metabolism/Anaerobic Aquatic Metabolism

Not required, since Tier I studies do not indicate adverse effects.

Dispenser – Water Leaching

Not required, since the product is not to be applied in a passive dispenser.

Seedling Emergence

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) indicates this requirement is a data gap, and that data will be required via a data call-in. The registrant requests regulatory treatment consistent with that for registered acetic acid herbicides.

Vegetative Vigor

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) indicates this requirement is a data gap, and that data will be required via a data call-in. The registrant requests regulatory treatment consistent with that for registered acetic acid herbicides.

**Tier III**

Freshwater Fish/Invertebrate Testing

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) concludes that "At current label uses, risks to aquatic organisms from these uses are expected to be



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minimal, since contamination of aquatic environments from runoff will only result in short-term pH changes that will be counteracted by the natural buffering capacity of the water and soil.”

#### Marine/Estuarine Fish/Invertebrate Testing

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) concludes that “At current label uses, risks to aquatic organisms from these uses are expected to be minimal, since contamination of aquatic environments from runoff will only result in short-term pH changes that will be counteracted by the natural buffering capacity of the water and soil.”

#### Aquatic Field Fish/Invertebrate Testing

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) concludes that “At current label uses, risks to aquatic organisms from these uses are expected to be minimal, since contamination of aquatic environments from runoff will only result in short-term pH changes that will be counteracted by the natural buffering capacity of the water and soil.”

#### Avian Reproduction

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) does not identify this as a data requirement that needs to be filled.

#### Wild Mammal Acute Toxicity

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) does not identify this as a data requirement that needs to be filled.

#### Terrestrial Field Testing

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) does not identify this as a data requirement that needs to be filled.

#### Field Testing for Pollinators

The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) does not identify this as a data requirement that needs to be filled.

#### Nontarget Plant Studies

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The Registration Review Summary Document for Acetic Acid and Salts (EPA, 2008) does not identify this as a data requirement that needs to be filled.

### **Reviewer's Comments**

Sufficient information was submitted to support the requested waivers for Avian Acute Oral Toxicity, Avian Dietary Toxicity, Freshwater Fish Acute Toxicity, Freshwater Aquatic Invertebrate Acute Toxicity, Nontarget Insect Testing, Sediment and Soil Absorption/Desorption, Soil Column Leaching, Laboratory Volatilization from Soil, Hydrolysis, Aerobic Soil Metabolism, Photodegradation in Water, Photodegradation on Soil, Anaerobic Soil Metabolism, Aerobic Aquatic Metabolism, Anaerobic Aquatic Metabolism, Dispenser – Water Leaching, Freshwater Fish/Invertebrate Testing, Marine/Estuarine/Fish/Invertebrate Animal Testing, Aquatic Field/Fish/Invertebrate Testing, Avian Reproduction, Wild Mammal Acute Toxicity, Terrestrial Field Testing, Field Testing for Pollinators, and Nontarget Plant Testing for Fleischmann's Vinegar Weed Control. Studies for Seedling Emergence and Vegetative Vigor will need to be conducted. The registrant requests regulatory treatment consistent with that for registered acetic acid herbicides.

### **References**

EPA, 2008. Acetic Acid and Salts Summary Document Registration Review: Initial Docket March 2008 Case # 4001, SRRD, OPP, USEPA.

HPV, 2001. U.S. High Production Volume (HPV) Chemical Challenge Program – Robust Summaries for Acetic Acid and Salts Category. American Chemistry Council, Acetic Acid and Salts Panel. June 28, 2001.